

Appl. No. 10/605,537  
Response dated 09/02/2005  
Reply to Office Action of 03/02/2005

### REMARKS/ARGUMENTS

Applicant has canceled claims 1-16 thereby rendering the Examiner's prior rejection moot and respectfully requests consideration of the newly submitted claims 17-38. In the prior action the Examiner cited the Wilding reference (US 5,866,345) as anticipating the claimed invention. Applicant submits that the Wilding reference does not read on the newly submitted claims for at least the following reasons stated herein. The Wilding reference is a flow system that utilizes the described device to mix fluids. This is in stark contrast to the claimed invention which provides structures for fluidically isolating different fluids. Moreover the Wilding patent lacks a barrier region that couples a first region of a microfluidic device with a second region to enable a biological specimen to extend across the barrier between the two regions. Any flow channel described in Wilding that might arguably be adapted for such an approach lacks at least one embedded microgroove having a width and height that would enable a second volume of fluid to be fluidically isolated from a first volume of fluid via hydrostatic pressure maintained via said at least one embedded microgroove. The Wilding Patent (see e.g., Col. 7 line 52 to Col. 8 line 28) does not describe or even suggest an instance where a first region of a device is fluidically isolated from the second via hydrostatic pressure. It describes an approach for using small microfluidic channels to mix two solutions together. Wilding does NOT keep the solutions separated.

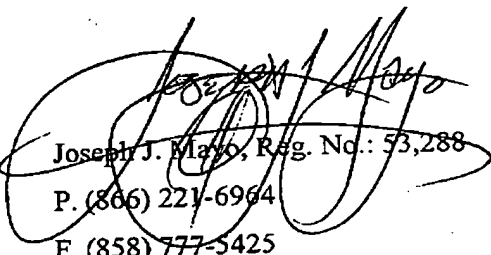
The Kirk reference (US 2002/0168757) is also distinctly different than the claimed invention. In Kirk et al the device consists of two reservoirs connected by a single channel. The fluid flows from one reservoir to the other thru different size grooves. This is a stark contrast to the claimed invention which isolates flow across the barrier region and in one or more embodiments (see e.g., claim 32) allows a neurons' cell body to be confined to one side while the neuritic region can extend across the barrier to a second region of the device that has a different fluid composition-fluidically isolated from the cell body. Thus in this case neuronal processes or axons can be studied in different media composition. Such an ability has not been possible until the present invention. The Cremer reference (2004/00057720) is for generating temperature gradients and also lacks isolated compartments.

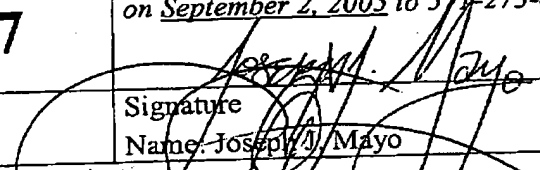
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### CONCLUSION

For at least the reasons stated herein, Applicant respectfully submits that the new claims are in condition for allowance. If the Examiner differs in this conclusion, the Examiner is hereby requested to contact Applicant's representative for purposes of a telephone interview at the number listed below before any action (other than an allowance) is initiated.

Respectfully submitted,  
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<p>Correspondence Info:</p> <p>Customer Number</p> <p><b>36067</b></p>	<p><b>CERTIFICATE OF TRANSMISSION</b></p> <p><i>I hereby certify that this correspondence is being facsimile transmitted to the United States Patent and Trademark Office on <u>September 2, 2005</u> to 571-273-8300.</i></p>
	<p>Signature </p> <p>Name: Joseph J. Mayo</p> <p>Date: September 2, 2005</p>